

Israel network integrates clinical data for 8 million patients

/Case Study



The desire to aggregate patient information from disparate sources, do it quickly and present it in a way that made sense to caregivers gave rise to what is now called the Ofek Network, powered by the Altera Digital Health dbMotion™ Solution, across Clalit Health Services. It connects multiple health systems that serve Israel's 8.3 million residents.

The technology compiles a view-only patient record in less than 10 seconds, freeing physicians to spend more quality time with patients, saving money on unnecessary tests and procedures, as well as reducing the incidence of complication. Because the solution sits above existing records systems to pull information based on search parameters, no changes to those legacy technologies are required for implementation.

Clalit Health Services has achieved significant savings across its organization by reducing unnecessary labs and imaging studies. It also achieves better patient outcomes that occur when a provider can view the pertinent portions of a patient's records in a dashboard format, with the ability to drill down into information.

As the Ministry of Health looks to integrate clinical data across Israel, it is using the Ofek Network as a model. "We're to the point that most hospitals and clinics across the nation can exchange clinical information using dbMotion," Chief Information Officer Yechiel Gepner said. "It's a logical next step that Israel is using dbMotion as the template to connect other providers into a truly nationwide network."

Client Profile

Clalit Health Services

Tel Aviv, Israel

OVERVIEW

- One of the world's largest HMOs/IDNs
- 4.2 million clients
- 5,500 beds
- 14 hospitals, 1,300 clinics, 420 pharmacies
- 40,000 employees, including 9,000 physicians and 11,500 nurses
- 60 million primary care encounters
- 2.2 million ambulatory care visits
- +1 million emergency room visits
- 350,000 admissions
- 130,000 surgical procedures

ALTERA DIGITAL HEALTH SOLUTIONS

- Altera Digital Health dbMotion™
- Altera Digital Health dbMotion™ Agent



+25,000 Users



+2,000,000 Patient records viewed per month



+15,000,000 Pages viewed per month



<10 Seconds Avg. response time

Altera.
DIGITAL HEALTH

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Yechiel Gepner, Chief Information Officer Clalit Health Services

A single patient record, compiled in seconds

Clalit Health Services is one of the world’s largest health service organizations, serving more than 4 million patients and accounting for more than one-third of all acute-care beds in Israel. In 1999, Clalit Health Services executives began thinking about how best to share clinical information among widely dispersed hospitals and clinics.

Several challenges emerged, including the realization that dozens of disparate electronic health record (EHR) systems and health information systems deployed throughout the organization didn’t provide a full patient picture and couldn’t communicate with each other. Patient information was transferred irregularly and sent either through physical records or by fax, both which often led to delayed or lost records, privacy issues and an incomplete patient picture.

Clalit Health Services executives determined that an information aggregation system should provide a medical record that follows the patient through the system — regardless of location — to create a continuum of care. This capability would return relevant, complete information to caregivers in real time at the point of care, subject to permissions and privacy regulations.

The ultimate goal was to improve the quality of care through a reduction of medical errors and provide proactive care by giving clinicians everything they need to be effective.

A clinically integrated network is born

Engaging clinicians, the organization’s working committees developed a list of specific prerequisites that the system had to meet, including:

- Minimal data set, with all basic information viewed on one screen to enable easy, user-friendly access to facilitate the immediate start of care.
- Ability to drill down into data for rapid diagnosis using detailed information.
- Decentralized structure, with all data remaining in the originating systems/locations, which alleviates the need for creation of a central database or replacement of existing operational systems.
- Strict security and privacy which adheres to Israeli privacy laws and meets international standards of security compliance.
- Performance, with a 10-second maximum time to collect and display relevant data to ensure usage and acceptance among caregivers.
- Scalability, flexibility and robustness that would promote ease of use, adapt to new security or data guidelines, and allow easy connectivity to new operational systems.

The dbMotion interoperability solution is web-based; a query returns a single record based on virtual patient objects aggregated from disparate systems. There is no single point of failure, so if information fails to flow through the system, the user is informed at the time results are presented. Other features include alerts, messaging, notifications, tracking logs and an auditing function.

Implementation occurred within 12 months, with no disruption to workflow and minimal training because of its familiar, Windows-based functionality.

"The system does not require any change in workflow or the way providers work," says Ludovic Abraham, chief technology officer at Clalit Health Services. "It presents all information in one view, which is user-friendly. It only takes a minimum of guidance, 10 to 15 minutes, to train a new doctor on the system."

As a result of a successful pilot at the 1,000-bed Soroka Medical Center (Beersheba, Israel), executives decided in 2001 to implement the solution throughout Clalit Health Services, using a common framework that forms the backbone of the Ofek Network.

Physicians in a typical Clalit Health Services primary care practice have just seven to nine minutes with each patient, explains Dr. Rina Yahalom, deputy chief medical officer at the Clalit Health Services hospital division. The quick aggregation of data gives physicians more quality time with patients, which leads to better outcomes.

"Some physicians needed 10 minutes to gather the information they needed to practice good medicine," Yahalom says. "Now we get the same information in seconds and presented in a way that makes sense."

Yahalom continued: "We've had a long, satisfactory history with the dbMotion system... For us, it's a way of life. It's the way we practice medicine."

Expanding the Ofek Network

Based on the success of the Clalit Health Services implementation of dbMotion, Sheba Medical Centre (Tel Aviv, Israel) implemented the same solution in 2005. Once that was accomplished, officials at Sheba, a 1,700-bed facility, asked to join the Ofek Network. This marked the first time a non-Clalit Health Services facility joined Ofek, a move that greatly expanded the reach of both facilities and brought a new level of patient care.

Rambam Medical Centre (Haifa, Israel) serves 2 million residents in the north, employing more than 900 physicians and about 3,600 other workers. The medical centre also serves as the military hospital for Israel's Northern Command, the U.N. peacekeeping forces stationed in the area and the U.S. Sixth Fleet. Rambam had connected medical records within its system using a home-grown EHR, but it had no ability to share or pull data from other systems.

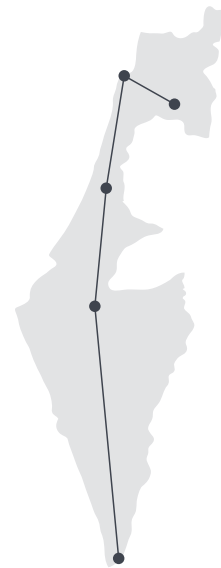
After seeing the success of the Sheba implementation, Rambam asked to join the Ofek Network and completed the integration in just four months. An interface with the EHR was designed using single sign on and silent login. This capability enables authorized Rambam EHR users to access the Ofek Network by clicking a button on the EHR screen. Results are returned within 10 seconds.

Each participating provider outside Clalit Health Services accesses patient records on the Ofek Network using user ID, password and security protocols from the home system, Gepner notes. "We're not directly involved in the aggregation of data," the CIO says. "It doesn't affect our day-to-day lives."

Without a control group, quantifying results of an integration of this magnitude can be difficult. Clalit Health Services has achieved significant cost savings through the reduction of redundant lab tests and imaging studies in its eight primary care hospitals. And, although it is anecdotal evidence, Yahalom says the integrated patient record results in fewer medical errors and overall better patient care.

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Ludovic Abraham,
Chief Technology Officer
Clalit Health Services



Clalit Health Services Ofek Network is a model for clinical data integration, connecting sites across Israel.

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Deputy Chief Medical Officer
Clalit Health Services

In her practice, Yahalom often sees patients who were just released from the hospital. Because there is often a delay in delivering discharge reports, Yahalom uses the pre-discharge letter and information in the integrated patient record to review the patient's hospital stay.

"By using Ofek, I get a very good sense of what happened with the patient, and I can adjust my schedule of medications, tests and such based on that," Yahalom says.

The Ofek Network quick response time gives caregivers more time to devote to patient care, rather than spending time searching for critical medical information. An integrated record also promotes proactive and preventive care that logically reduces the inherent costs to the healthcare system.

A recent addition for Clalit Health Services is dbMotion™ Agent, which presents a dashboard of information on top of the native EHR. This capability enables providers to drill down quickly to see the latest developments without accessing the entire record. Sometimes the entire record presents too much information, this solution can help bring the important issues to the forefront, notes Gepner.

At the end of 2011, the Ministry of Health signed a contract to implement the Ofek Network in all other HMOs and general hospitals across Israel. In addition to Clalit Health Services' 14 hospitals, today there are 24 more hospitals, three more HMOs, and the Israel Defense Forces (IDF) connecting to the Ofek Network and servicing Israel's eight million residents.

"We're very proud of being the first and only country to implement such a solution in a national way," says Abraham. "It's a critical information system that our doctors can't imagine being without."

Yahalom agrees that the solution is a vital component of Israel's healthcare delivery system. "During routine visits or catastrophes, at home or away from home, the Ofek Network is always ensuring quality of care for patients all around the state of Israel," she says.